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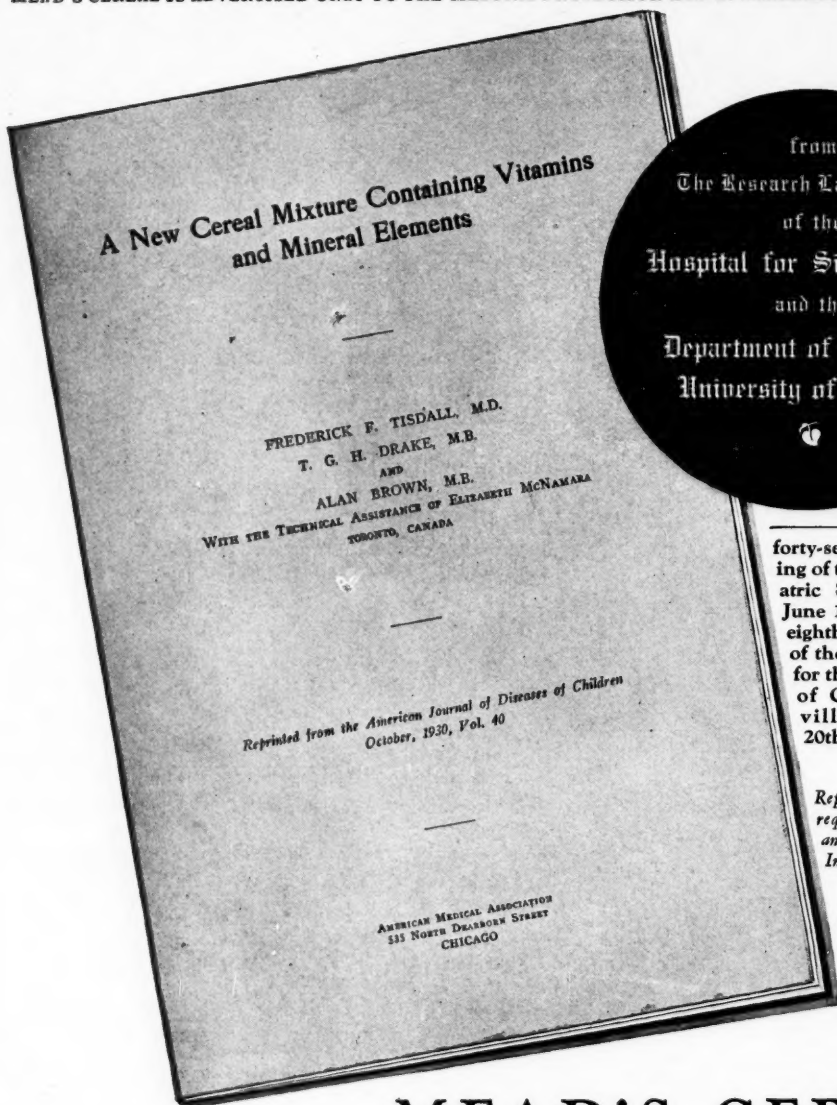
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ORIGINAL ARTICLES

WHITE BLOOD COUNTS*

By HARVEY E. WELLMAN, M.D.

184 WATERMAN STREET, PROVIDENCE, R. I.

The subject of this paper was suggested to me by a patient whom I have been following for the past seven months, and whose case, up to the present time, has not been definitely diagnosed. The case led me to study some of the more recent works on white blood counts, their behavior under normal conditions and during acute infections, also their importance in the diagnosis and prognosis of certain diseases. It might be interesting to review these before describing the case itself, and the diseases it suggested.

Dr. W. E. Garrey, in his article on leukocytosis, believes that physiologic variations in the number of circulating leukocytes are dependent on the lability of the vascular system. Under basal conditions of absolute rest, with the subject in a recumbent position, the leukocyte count falls reaching its lowest level within about an hour. Under ordinary conditions, this low level, once reached, is maintained as long as the subject remains quiet, mentally relaxed, and free from bodily discomfort. A long experiment, intestinal discomfort, or excessive hunger, will cause a gradual rise in the leukocyte count.

More than 95 percent of these basal counts were between 5000 and 6000. A few were as low as 4000, and a few were 7000, but the latter were in nervous individuals. A series of counts on successive mornings showed that the basal counts of a given individual were practically constant from day to day, except when there had been marked alteration in the nervous condition.

On normal subjects, under conditions of ordinary activity, the counts were between 8000, and 10,000, constituting the "activity level;" but, when a subject resumed a recumbent, relaxed position,

the count fell to the basal level within an hour. Exercise, psychic factors or pain will cause a sudden rise in the leukocyte count. Although ordinarily a count of 10,000 would not be considered as pathologic, when obtained on a patient whose basal level is 4000, it is definitely in the pathologic realm. These changes take place with such promptness (usually within five minutes) that one must think that the leukocytes are already in the vascular system, and that they are released into the circulation by changes in the vascular bed. It is possible that they are held in closed capillaries and that any vasomotor alteration of the capillaries, owing to reciprocal readjustment, will result in leukocytosis. The stimulation of afferent nerves containing either pressor or depressor fibres, will so shift capillary circulation as to produce leukocytosis. In a similar way, stimulation of the splanchnic nerve, with its rise in blood pressure, or the vagus, with its fall in blood pressure and cardiac inhibition, are equally efficient in the experimental production of leukocytes.

According to Schilling, the changes in the blood picture under pathologic conditions are due to an unequal balance between physiologic degeneration and regeneration of blood cells. As an aid diagnosis and prognosis in cases of infection, he has constructed a chart, at the extreme left of which he places the myelocyte, a precursor of the polymorphonuclear cell. This is a cell with a large, round nucleus and a few granules in the cytoplasm. This cell is never found in a normal blood smear. Next, to the right, he places the young premyelocyte, a cell with an indented nucleus and a granular cytoplasm. Next to this comes the older premyelocyte, with a deeply indented or band shaped nucleus. A very small number of these are found in normal smears. At the extreme right are the mature polymorphonuclear cells—the neutrophiles, eosinophile and basophile—with lobulated nuclei.

The polymorphonuclear neutrophiles are movable, possess phagocytic and proteolytic properties, and are able to pass through the capillary walls. The more severe the infection and the more diminished the body resistance, the larger the number of younger forms appearing in the blood streams.

*Read before the Rhode Island Medical Society, December 4th, 1930.

This Dr. Schilling calls "a shifting to the left." The less virulent the infection in a case of good resistance or as the improvement progresses, the less will be the percentage of younger forms and the higher that of older ones—that is, "a shifting to the right." This phenomenon is noticeable not only in cases with high leukocyte counts but, also, in cases of leukopenia, as typhoid or influenza, or in cases with a low resistance and a seemingly normal white count. The percentage of neutrophiles and its shifting may determine clinical judgment in many cases.

*The function of the eosinophiles is not well known. They probably contain a proteolytic ferment and play an important reactive part when stimulated by the action of foreign proteins.

The function of the basophiles is unknown. Their increase goes with eosinophilia.

Lymphocytes vary greatly in size. The typical small lymphocyte is slightly larger than a red cell while the large forms may have a diameter two or three times as great. The small type is supposed to be the more mature form. They have an ameboid property, seem to have the power to digest fats and are not phagocytic. They are influenced by infections with bacteria covered with a layer of fat or wax—as typhoid, leprosy or tuberculosis.

Monocytes play an important part in chronic infections, especially tuberculosis. Their sudden increase and decrease indicates a good body resistance.

As we all know, leukocytosis occurs in most infections at some time. In acute cases it depends almost entirely upon an increase of neutrophiles. There are also important changes in the qualitative blood pictures, principally in the degree of maturity of the cells. As Dr. Leon S. Lippincott has pointed out, the appearance of young, immature neutrophiles in the circulating blood is an indication of active infection. The younger and more immature the cells are, the more active the infection because the neutrophiles are the main line of resistance and, as the demand for them increases, the bone marrow puts immature cells into circulation. In infections and inflammatory conditions, a comparison of the percentage of neutrophiles with the total leukocyte count yields more information than either alone. The percentage of neutrophiles represents the severity of the infection or degree of toxic absorption and the total count indicates the patient's power of resistance. In moderate infec-

tions, with good resistance, the leukocyte count and the percentage of neutrophiles will be increased proportionately. When the neutrophilic percentage is increased to a greater extent than is the total number of leukocytes, no matter how low the count may be, either a very poor resistance or a very severe infection is indicated.

Dr. Arthur Weiss believes that every infection causes a bone-marrow reaction which demonstrates itself as a neutrophilia lasting for some time. This he calls "the neutrophilic phase" of infection. As the number of immature neutrophiles begins to drop, there is a sudden rise in the number of monocytes "the monocytic phase." This shows a hyperfunction of the reticulo-endothelial system and indicates a crisis with the healing phase dominant. It lasts only a few hours so that unless repeated blood smears are made, it is overlooked. It does not occur in pneumonia because the entire lobe is not exactly in the same stage of involvement at the time of the crisis. In chronic or sub-acute illnesses, monocytosis is a sign of the continuation of the infection. For example—in cases of chronic sepsis, such as bacterial endocarditis, there is a constant high level of immature neutrophiles, accompanied by an increase in the number of monocytes. The percentage of lymphocytes may be subnormal, normal or slightly increased. In acute infections, after the monocytic phase, the percentage of lymphocytes rises rapidly and remains high until the infection is overcome. This rise is not due to the disappearance of the neutrophiles but to active stimulation of the lymphatic system. In cases of acute sepsis with paralysis of the bone marrow a marked leukopenia may be found, often as low as 1000 to 1500 white blood cells with 60 to 70 percent lymphocytes.

The patient to whom I referred at the beginning of the paper gives no history of an acute infection but is interesting because of the abnormal blood picture without definite clinical signs.

The patient is a married woman, twenty-three years of age, with a negative past history up to the time her baby was born fourteen months ago. She made a satisfactory recovery from her confinement and felt well until nine months ago when she complained of "feeling tired" and noticed that she was losing weight rapidly. This continued for two months when it was discovered that a maid in the family had tuberculosis. The patient then came to me for a general physical examination. Her tem-

perature was 99.6° and the pulse 120. She was markedly under weight but otherwise the examination was essentially negative—the lungs were clear and there were no enlarged glands nor palpable spleen. The urine was normal, there was no anemia and the hemoglobin was above 80 percent. However, the white blood count was interesting in that the total count was 7500 with a differential count of 25 percent polymorphonuclear neutrophils and about 70 percent lymphocytes, of which a large proportion were immature cells. Two weeks later, the total count had dropped to 5875, of which 16 percent were neutrophils, 80 percent lymphocytes, half of them, immature, 1 percent basophils and 4 percent transitional. On further questioning the patient recalled having had, a few months before, a very slight sore throat which lasted about a day but had never noticed swollen nor tender glands. Her basil metabolism at this time was +22.

Because of the exposure to tuberculosis and the blood picture, an X-ray of the chest was taken. This showed clear lung fields and no evidence of enlarged mediastinal glands. Repeated blood counts and smears were virtually the same.

With rest and a high vitamin diet, she stopped losing weight and complained less of fatigue. She still continued to run a slightly elevated afternoon temperature and a rapid pulse. Then, a month and a half after her first visit, she developed a severe gastro-enteritis accompanied by nausea, vomiting and abdominal pains. This lasted about two weeks and, during that time, the leukocyte count rose to over 6500 with a neutrophilic count of 46 percent and a lymphocyte count of 45 percent. After her recovery the counts dropped back to their former levels. During the summer she was away much of the time, gained in weight and no longer complained of fatigue. A few weeks ago the leukocyte count was 7550 with 57 percent neutrophils and 36 percent lymphocytes. Most of these were the mature forms, only a few immature forms remaining.

In view of the fact that the blood picture is returning to normal, it is probable that the patient had previously had some infection from which the blood is slowly recovering.

Dr. Jackson, of the Boston City Hospital, described the case of a woman with a blood picture very similar to the one just mentioned with a negative physical examination and with no history of

infection or enlarged glands. She was followed closely for some time without a positive diagnosis being made, then she failed to report. Three years later she again appeared with enlarged cervical glands which proved to be a lymphosarcoma.

Considerable work has been done within the past few years on diseases characterized by agranulocytosis. Although the clinical aspects of the case I have described cannot be classified with them yet the blood picture is close enough to warrant a description of some of them.

Schultz, in 1922, reported cases of agranulocytic angina characterized by the occurrence, usually in elderly females, of a necrotizing throat infection with fever, rapidly developing exhaustion, slight jaundice and a quickly fatal issue with a blood picture of leukopenia, an almost complete absence of granulocytes, a relative lymphocytosis up to 100 percent and an almost complete lack of involvement of red cells and platelets. The bone marrow, at autopsy, was red and, on microscopic examination, was cell poor with almost complete absence of granulocytic cells.

Two cases of the agranulocytic type were reported by Dr. George J. Kastlin at the Toronto General Hospital. The onset, in both cases, was with malaise, sore throat, weakness and high fever. The gangrenous stomatitis was extensive and associated with regional adenopathy. There was no definite jaundice. Cultures from the mouth were negative for diphtheria and positive for hemolytic streptococcus. In one case the white blood count was 2500 per c.m. with a differential count of 6 percent polymorphonuclear leukocytes, 2 percent eosinophiles, 74 percent lymphocytes (56 percent were large cells) and 15 percent endothelial cells. Before death, the white blood count fell to 540 cells per c.m. In the second case, the white blood count was 12,000 per c.m. with no polymorphonuclear leukocytes, 2 percent eosinophiles, 76 percent lymphocytes (73 percent large cells) 10 percent endothelial cells and 12 percent questionable or destroyed cells.

According to Dr. Katslin, the characteristic changes in agranulocytic angina are produced in the blood and blood forming organs associated with gangrene and inflammation in various locations. As the bone marrow shows a decrease in granular cells, the decrease of these cells in the blood stream is due to a failure of their development in the marrow. The changes in the blood picture have been

noted before the tissue changes. Dantz has stated that there is a disturbance in the balance between the demand and production of white blood cells so that the progress of infection is not combated. On account of the lack of resistance to infection, it is logical that necrotic lesions should appear in locations that harbor organisms. The disease has no epidemic character and there is no apparent congenital disposition to agranulocytic blood changes. In cases of recovery, the blood picture returns to normal.

Dr. George Blumer collected a number of reports which showed cases of local and general sepsis not affecting primarily the skin or mucous membrane but accompanied by a leukopema and an agranulocytic blood picture. He came to the conclusion that, in some individuals, the bone marrow reacts differently to bacterial infection than it does in the majority of patients. But it is a question whether the bone marrow condition precedes the local infection or follows it. If it is assumed to precede, probably some toxin damages the bone marrow and paralyzes its ability to form granulocytes—an action analogous to the effects of chemical substances, such as benzol, on the bone marrow. In other cases, there is evidence that in the early stages of the infection there is some granulocytic formation and that agranulocytosis becomes more and more pronounced as the infection progresses—suggesting that the infection causes the bone marrow lesions. It is practically impossible to diagnose, during life, between aleukemic leukemia and sepsis with agranulocytosis.

Other diseases which the blood smears of my patient suggested, but which have not been out by the history or subsequent findings, are glandular fever (or infectious mononucleosis) and the leukemias.

In glandular fever, lymphocytosis is usually evident at the start but may reach its maximum only after two or three weeks. Their total count may be 12,000 to 20,000 cells per c.m. of which 85 percent may be lymphocytes. Most cases show a leukopenia sometime during their course, usually several weeks after the onset. The count may fall to 4000 per c.m.

In some cases of lymphatic leukemia there may be a period during which the clinical features are characteristic but the blood pictures show little or no deviation from normal. Usually this aleukemic, or aleukocythemic, stage is followed by the sudden or gradual appearance of blood changes which

progress until the typical picture is present, indicating the breaking through of the abnormally produced lymphocytes into the blood stream. There are instances in which this aleukemic condition persists permanently even though the tissue changes and clinical manifestations proceed through the usual course of the disease. As a rule, although the total leukocyte count is not increased, there is a relative lymphocytosis.

Conclusion

I have presented a report of a patient with the hope that some diagnosis might be made. She gave an essentially negative past history, repeated physical examinations have been negative except for a slight rise in temperature and elevated pulse and yet she has run a persistently low white blood count with a high percentage of lymphocytes.

A review of the literature shows that a low white count may exist normally when a person is at rest but the differential count should be normal. Lymphocytosis may follow acute infections and is characteristic of certain diseases such as agranulocytic angina, glandular fever and lymphatic leukemia. It, also, occurs in some individuals during infections indicating an abnormal response of the bone marrow. The patient has had no enlarged glands nor signs of active infection. After being followed for nearly a year, the blood picture is slowly returning to normal, which rules out a leukemia. The conclusion, therefore, is that at some time she had an infectious process from which the bone marrow is slowly recovering.

REFERENCES

- W. E. Garrey, M.D.: "The Basal Leukocyte Count and Physiologic Leukocytosis." *Proceedings of the Staff Meeting of the Mayo Clinic*, 4:157-159, May 15, 1929.
- Leon S. Lippincott, M.D.: "Some Diagnostic and Prognostic Blood Indications." *New Orleans Medical and Surgical Journal*, 82:761-769, May, 1930.
- Felix Baum, M.D.: "The importance of Serial Hemograms." *American Medical Journal*, June, 1929.
- Arthur Weiss, M.D.: "The Role of Leukocytes in Infection." *M. Clinics, North America*, 13:57-770, November, 1929.
- George J. Katslin, M.D.: "Agranulocytic Angina." *American Journal of the Medical Society*, 173:799-813, 1927.
- George Blumer, M.D., "The Agranulocytic Blood Picture in Conditions other than Angina." *American Journal of the Medical Society*, 179:11-16, January, 1930.
- C. W. Baldrige, M.D., F. J. Rohner, M.D., and G. H. Hausmann, M.D.: "Glandular Fever" (Infectious Mononucleosis). *Arch. Int. Med.*, 38:413-448, 1926.

MODERN TREATMENT OF ACUTE GONORRHOEA*

By STANLEY SPRAGUE, M.D.

84 BROAD STREET, PAWTUCKET, R. I.

It is a pleasant honor to be introduced by such a distinguished and honorable gentleman as your president, Dr. Chase. I desire to thank him and also you for the privilege of appearing here to state a few facts, a few fads and a few trite items regarding the "Modern Treatment of Acute Gonorrhoea."

This disease is one of the oldest and most consistent on record; Moses declared laws regarding it, circumcision amongst the Jews was originated because of it. Hippocrates erroneously described the cause of it, Celsus was the first to treat it; the disease has flourished without cessation or diminution from the 15th Century, B. C., to the present, and every physician practising today has the best but independent method of treating it. The human race advances because of it and in spite of it; therefore the tolerance of mankind is assuredly stupendous. Medical science has controlled malaria, has found sera for certain types of pneumonia, uses definite prophylaxis against typhoid, has practically eliminated diphtheria, has found a practical specific treatment for syphilis and is rapidly finding cures of positive action for several other diseases, but the festive gonococcus proceeds right merrily to infect, re-infect, disorganize and sterilize 10 to 15% of the human race. In the limited time given me, I shall endeavor to convey certain ideas regarding the disease. And I am sure that you will all wish to be shown just how to treat this acute form.

First and foremost, the patient must be treated with the utmost in cheerful psychology. No disease in life demands more mental effort on the part of the physician than gonorrhoea. All sorts of mental reactions are noted in these patients and each must be met; the patient's mind must be turned from himself as much as is mentally possible.

Secondly—BE GENTLE. Be gentle in your examination, be courteous in your questioning of these cases, be gentle in your treatment. Robert Burns may have had the treatment of this disease in mind when he said,

"Man's inhumanity to man

Makes countless thousands mourn."

*Read before the Rhode Island Medical Society, December 4th, 1930.

A pleased, gently treated patient is the best advertisement.

Thirdly, you must impress upon your patient by every means at your command the necessity of strict hygiene and cleanliness, not only with himself but toward all others with whom he comes in contact in his daily life.

Fourthly, be slow in making promises of cure—especially as to the duration of the disease. There is no patient afflicted with any disease who clings closer to his physician's words than the patient with acute gonorrhoea; therefore, it behooves one to be exceptionally careful in the choice of words expressing your own ability to quickly cure; incidentally, no patient forgets more quickly your efforts on his behalf than this same Gonorrhoea patient.

Now let us consider the so-called "Abortive Treatment." Keyes mentions it only to condemn it. Geringer has given it up. Walther states it is useful in 1% of cases. Carle is able to suppress a beginning discharge in 48 hours and cure the case in 15 days; Lippmann cures 66% of G.C. in three days by silver nitrate irrigations twice daily (strength 1-3000, 1-1000). (His argument is interesting. He claims G.C. is an infectious disease with a cyclic course in which the process slowly reaches its climax, remains there for a time to slowly decrease again; therefore, at the outset, gonococci have poor resistance to treatment and the strong inflammation which penetrates to the submucous tissue and the defensive reaction of the organisms co-operate in destroying and expelling the organisms.) Jeck advises daily injections of acriflavine for 5-7 consecutive days; Luys describes several abortive treatments in use on the continent, stating 60% cures by injections of silver nitrate up to 20%, 33%, by instillations of silver nitrate, painting of canal through a special tube with 5% silver nitrate; (Ahlstrom) injections 2-4% solution protargol twice daily for 5 days, then 2% twice daily, only 13 failures in 100 cases; (Janet modification) permanganate irrigations with 87% cures (solutions 1-3000-1000. All the foregoing claim greater success in second infections.

Let us next take up general and specific treatment of the acute form of the disease. As briefly as possible, let us review treatments advocated by various authorities. Pelouze, a most interesting writer, uses anterior irrigations of pot. permang. daily, following each irrigation by injection of

silver nuclein for a period of two weeks; then passes acorn sounds to peno-scrot. angle and if the following smear is negative, passes them to bulbomembran. urethra; if smear still negative, passes regular sound to bulb-memb. urethra and massages over same. .5 cc. G.C. vaccine is then given and smear taken. Following this, prostate mass. without irrigations. He avers that the G.C. fixation test shows so little that he does not use it. In the acute poster. G.C., he gives drugs until vesical tenesmus is past, then uses intra-vesical irrigation with permang., followed by silver nuclein instillations into the bladder. After two weeks, prost. massage on full bladder twice weekly. Duration of treatment—three months. Keyes advocates daily injection by the physician of 1-2000 acriflavine retained for one minute only. When discharge ceases passage of sounds is instituted. His treatment takes 6-8 weeks. His treatment of acute post. conditions is rest, heat to perineum, hot sitz baths, five minutes in duration, hot rectal douches, gentle prostatic massages, bromides and opium as needed. Geringer speaks of the value of various local remedies, claiming 20% argyrol kills G.C. in 20 seconds but has no penetrative power. Hydrastis is of no value. Advises injections by the patient 3-4 times daily of argyrol 10-20%, protargol $\frac{1}{4}$ to $\frac{1}{2}\%$, later Zn. and alum as astringents. He had discarded pot. permang. as distinctly inferior. Uses silver salts until G.C. have disappeared from the discharge, then employs through and through irrigations with silver nitrate for 14 days in increasing strengths. Duration 6-8 weeks. In acute post. G.C. advises instillation of 15% silver nitrate to post. urethra, plus hand injection to anter. canal. Hot rectal saline twice daily, with usual Belladonna and pot. acetat. internal medication. Suppositories of morphine if required.

Walther immediately treats phimosis balanitis, venereal warts, pin point meatus and stricture. He feels that the antiseptic dyes are far superior to old silver preparations. Uses $\frac{1}{4}\%$ pyridium or mercurochrome, 1-2000 neutral acriflavine and changes drug from day to day. Internally, uses tablets of pyridium which he claims rids the urine of pus and bacteria. Advises twice daily office treatments and self injections to be held 10-15 minutes. Post. urethritis is treated by instillations of 2% silver nitrate three times weekly, plus usual relieving internal treatment. He advocates strongly electric spark to occlude periurethral glands followed by

instillations of 2% mercurochrome; and is a distinct believer in use of diathermy for epididymitis and prostatitis and acute rheumatic manifestations, plus intramusc. injections of foreign proteins.

Wade calls attention to the great value of vasotomy in every indicated case of anter. Gon. basing his argument that 60-90% of all acute anter. cases become posterior, therefore the vesicles which are of naturally poor resistance to infection due to their structure (pseudo-strat. epith.), he does vasotomy at first sign of vesicle tenderness and further states that with the vesicles cared for, more satisfaction is obtained in treatment of prostate and urethra.

Browne believes in 8 oz. water every hour, alkalies to render urine bland, hot sitz baths twice daily. Advises against hand injection for first three weeks. He prefers daily office treatment with mild pot. permang., plus 5-minute injection of mild organic silver salts, acriflavine or mercurochrome. He treats posterior infections with absolute rest in bed and daily anterior irrigations of pot. permang. His results are excellent with only 2% epididymitis.

Balog, writing in a German urologic magazine, considers urethritis of secondary importance. Claims most articles on treatment of Gon. are arbitrary, commercial phantasies without consideration of anatomy, physiology or bacteriology; in fact, he asserts the present slogans of scholastic medicine are nearly all dogmas transmitted from generation to generation. To fail to do a gram stain is malpractice. He has seen many cases with gram pos. diplococci according to the text-book should be acute G.C., but are really secondary manifestations of tonsillitis or diseased root of a tooth. He decries irrigations, injections, cauterizations and curretting as scientific swindles without successful results. Considers massage of the prostate as dangerous and as injurious as similar massage of the breasts. Strange as it may seem, with this destructive criticism, Balog offers no alternative in treatment.

Jeck voices avoidance of over-treatment and urges recognition that Gon. is a self limiting disease. He advises daily injections by the physician for 5-7 days of acriflavine and then shifts to silver protein if required. Decries the use of irrigations, especially the forced type and decries the use of urotropin. Believes diathermy not well established and aolan, intraven. mercurochrome and sod. iodid.

or metaphen give no definite or sufficient end results in his hands to justify their continuance.

Luyt advises excess of liquids by mouth, with soda bicarb., warm baths (97 degrees) of 45 minutes duration three times weekly, gives 15-30 grains of urotropin t. i. d.; bromides and camphor as needed. Advises whole channel irrigations with pot. permang. 1-8000, following novocain anesthesia twice daily; follows this with occasional massage of the canal over bougie to prevent by the constrictive action of the solution the sealing in of infection in Littre's glands. He considers protargol the best silver preparation for Gon., and also states acriflavine of distinct value but it is very expensive and messy to handle. He feels that urethral injections by the patient are more dangerous than helpful as being productive of many complications. In post. urethritis, he advocates through and through irrigations with massage of the prostate; rectal irrigations with warm saline, absolute rest, hot baths of long duration; also urotropin at meal times. He feels that serum and vaccine therapy are valueless in acute Gon. and that the disease is in no way modified in its course by their use.

There is comparatively little written about Gon. in women, and yet we realize that were it not for those women so affected, whether innocently or otherwise, there would be no noticeable spread of Gon. in the male. Almost all articles dealing with the treatment of the female seem rather indefinite and uncertain.

Irland states there has been no improvement in treatment in 50 years. He advises rest in bed, external washes and douches with pot. permang. followed by instillations of argyrol. Advocates hot moist boric ac. packs, light diet, free catharsis, and excess liquids.

Maclachlan, Doederlin and Pugh advise diathermy to urethra, vagina and cervix with especial immediate attention to Skene's glands. They report 70% excellent results.

Pemberton agrees with Irland in rest, free catharsis, forced fluids, but uses boric ac. for douches and external washes with permang., followed by instillations of 2 oz. 1% mercurochrome and retained for 3 minutes—this continued for 10-14 days; his next step is thrice weekly treatment with mercurochrome 2% swabbed to vagina and cervix for 4 weeks with 2 cc. injections to urethra of 1% mercurochrome; advises cautery of Skene's and Bartholin's glands rather than using washes

through a hypo syringe and dull needle. If the discharge is still positive at the end of three months, he uses silver nitrate douches. He considers diathermy of use only in the chronic stages of the disease. It is his belief that gentle measures to assist Nature rather than to eradicate the disease by aggressive action are always indicated.

As it is the results of treatment that count most to our patients and I feel that I have given you sufficient outlines of treatment by other men, let us change our pronouns and talk in the first person.

In reviewing those few cases presenting themselves for treatment within the first twenty-four hours of the appearance of a discharge which may be considered cases in which the abortive treatment may be used, I find that anterior irrigations with 1-4000 pot. permang.—about 2 quarts in amount—followed by a 5-minute retained anterior injection of 15% argyrol or ½% mercurochrome, repeated every other day have the salutary effect of checking discharge and eliminating a chronic form of the disease. Under this treatment, I have not so far observed any other acute complications. The only regret that I have is that more of those afflicted do not report sufficiently early to derive benefit.

The general treatment of acute Gon. in the male is begun only after a rather careful full physical examination of the case, including blood test, has been made. If no contraindications exist, anterior irrigations are given twice weekly with pot. permang. 1-5000 and the patient, having been carefully instructed in the method of taking anterior injections, is told to use them in the following manner:—Urination first, inject 1 to 1½ drams of ½% protargol solution, retain same for five full minutes by the watch, let it out, wash the hands thoroughly with soap and water and drink a full tumbler of water. Repeat this procedure every hour while the patient is awake. To obviate the possibility of urinary spasm or highly irritative urine, a combination tablet of the balsams of cubeb and copaiba is given by mouth every four hours. A suspensory is insisted upon. For diet, the patient is allowed to eat everything with the exception of tomato, tomato catsup, mustard, mustard pickle, picalilly and chow chow. He may drink while under treatment just six things—water, milk, tea, coffee, cocoa and chocolate. Liquor and sexual excitement are, of course, barred. In over 80% of recorded cases, the discharge ceases in 10-14 days. At this time, massage of the anterior canal

over bougie, later over sound is begun, followed by anterior irrigations of 1-500 silver nitrate. Whether or not there now exists a morning drop, alternate treatments of prostatic massage and passage of bougies, later sounds, to the bladder are instituted twice weekly. At least one examination of the anterior urethra by means of a urethroscope is made during the 3rd or 4th week. When prostatic smears are showing less than 5-7 pus cells to a field, the case is given a month's rest, then a check up by means of prostatic massage and smear. Then a second check up at the end of another month at which time, if the smear is negative or shows only two or three pus cells to a field, the case is discharged with the following instructions: no liquor and no sexual intercourse for 90 days. Total time of treatment, approximately four weeks; total time of observations of the case, 3-4 months. Under this regime, recurrences do not occur; complications are surprisingly few.

In the treatment of women with acute Gon., douches twice daily with irrigol powder solution, the balsams for urinary distress if required. The office treatment, however, is confined to a thorough cleansing of the vagina and urethral meatus with lysol solution, followed by diathermy treatments twice weekly. The Corbus electrodes for urethra and vagina and cervix are used and they are used in that order, the treatment being of at least 40 minutes duration to a temperature of 112-116 degrees F. Smears are taken from each of these three areas at each succeeding visit. Six to eight treatments are necessary, in one case ten, to clear up all discharge and give repeated negative smears. Bartholin's glands when infected are treated by local anesthesia and electro-coagulation. So far with this type of treatment no inflammation or abscesses of Skene's glands have been observed. Total time of treatment 3-5 weeks. The same check up is required as in the male patients, smears being carefully taken from urethra, cervix and vagina at periods of one and two months following treatment.

In talking on such a subject as this, you can readily realize that only the briefest of wording can be given in the time allotted. It has been my endeavor to show you not only the varieties of treatment offered and the vagaries of various specialists in the use of drugs and methods, but also in as concise a manner as possible, to put forward an

outline of a rational and resultful treatment which is proving successful.

REFERENCES

1. Pelouze, P. S.: "Gonococcal Urethritis in the Male." 1928.
2. Luys, Geo.: "Test Book on Gonorrhea." 1922.
3. Geringer and Campuzano: "Gonococcal Infections." Tice P. 451.
4. Jeck, Howard S.: "Present Day Treatment of Gonorrhea in the Male." A. M. A. Journal, Vol. 93, No. 4, July 27, 1929.
5. Walther, H. W. E.: "Modern Treatment of Gonorrhea." The New Orleans Medical and Surgical Journal, 81:199-205. September, 1928.
6. Irland, Robert D.: "Gonorrhea of the Female Genital Tract." The Journal of the Kansas Medical Society, 25:260-262. August, 1925.
7. Pugh, Winfield Scott: "Gonorrhea in Women." Its Treatment by Diathermy, Physical Therapeutics, 46:32-40. January, 1928.
8. Lippmann: "The Abortive Treatment of Urethral Gonorrhea in Males." Medizinische Klinik, 23:1186-1187. August 5, 1927.
9. Wade, H. King: "Use of the Vas Puncture in Acute and Chronic Gonorrhea." The Journal of the Arkansas Medical Society, 24:219-220, May, 1928.
10. Browne, Henry S.: "The Management of Acute Gonorrhea in the Male." The Journal of the Oklahoma State Medical Association, 20:297-298, November, 1927.
11. Carle, Maurice: "The Abortive Treatment of Gonorrhea." Its Definition and Technique, Urologic and Cutaneous Review, 32:444-446, July, 1928.
12. Pemberton, Frank A.: "Treatment of Gonorrhea in Women." The Boston Medical and Surgical Journal, 193:415-418. August 27th, 1925.
13. Balog, Ladislaus: "Principles of Treatment of Gonorrhea." Zeitschrift fur Urologie, 21:286-294, 1927.

THE DIAGNOSIS OF PHTHISIS IN ADULTS*

By HARRY LEE BARNES, M. D.

WALLUM LAKE, RHODE ISLAND

In a short time one cannot hope to discuss in detail all the symptoms and signs, but merely to review briefly those which are most important.

I value the history so much that if offered a choice between examining 100 persons without talking to them, or of talking to 100 persons without examining them, I believe that I could find more cases of tuberculosis by talking to them.

*Read before the Providence Medical Association, February 2, 1931.

As from a fourth to a third of the cases have previously had tuberculosis in the family, this history, accompanied by symptoms of lung disease, adds greatly to the probability that tuberculosis is present.

Hemoptysis, in apparent health or with only slight symptoms of ill health, is almost always due to tuberculosis. Streaks or tiny clots of blood are often raised in acute respiratory infection or in valvular heart disease. Bleeding from the upper respiratory or digestive tracts must of course be excluded.

A primary fibrinous or sero-fibrinous pleurisy is almost always tuberculosis. The lung itself is involved simultaneously in some cases, and months or years later in many years.

An ischio-rectal abscess, a tuberculosis of the lymph nodes, bones, joints, genito-urinary tract or elsewhere should be immediately followed by a search for a lung lesion.

A history should be taken so that it will not only include the symptoms of tuberculosis if present, but also include the symptoms of other diseases which simulate tuberculosis.

Some patients suspected of tuberculosis after a few weeks of cough can be recognized as having had an acute respiratory infection if the attack began with a distinct coryza.

Investigation occasionally shows that a slight cough and expectoration can be accounted for by cigarette smoking, but it is also true that many tuberculosis patients persuade themselves that their symptoms are due to this cause.

If the patient is not asked whether his sputum ever tastes or smells badly, bronchiectasis may be overlooked or regarded as tuberculosis.

Lung abscesses are occasionally diagnosed as tuberculosis because a history of chronic cough beginning after pneumonia or tonsillectomy has been overlooked.

If careful inquiry is not made for slight attacks of dyspnoea and wheezing, some atypical cases of bronchial asthma will be considered tuberculosis. I have made this mistake myself and have seen half a dozen such mistakes within a year.

It is also true that a considerable number of cases of bronchial asthma develop on a basis of old tuberculosis, so that all asthma cases should have X-ray and sputum examinations.

Tuberculosis is frequently suspected in cases with chronic cough and expectoration, where more

care in taking the history will disclose the frequent colds, catarrh or bone tenderness resulting from sinus infection.

Metastatic cancer of the lung has been diagnosed tuberculosis because the history of primary cancer removed by operation, was not obtained. As the physical signs and X-ray evidence of cancer were almost identical with tuberculosis, the history was all important in this case. The incidence of symptoms is shown in Table 1.

TABLE I.

Symptoms

Phthisis	Found on Adm. to Sanatorium	Found by Exam. of Contacts
History of	2227 cases	59 cases
Family Infect.	31%	100%
Hemoptysis	45%	40%
Pleurisy	43%	42%
Cough	88%	60%
Expectoration	90%	43%
Fever	50%	25%
Night Sweats	56%	27%
Loss of Weight		61%

Physical Examination

We should conscientiously practice inspection, palpation, percussion and auscultation. Points long known but oft forgotten are: that stiff muscles of the chest or neck may cause dullness, that cough near the end of expiration followed by quick inspiration will frequently bring out rales, over areas of tuberculosis, which cannot be heard otherwise and that prolonged deep breathing causes rales to disappear temporarily which can be brought back by resting the patient. Persistent localized rales found above the third rib are likely to be due to tuberculosis, while rales found only at the bases are not likely to be so caused. A tuberculous lesion beginning at the bases fools us occasionally. As Fowler and others have shown that tuberculosis instead of first affecting the apex, frequently begins in the outer part of the first and second spaces, we ought to examine these areas with special care.

Physical examination is of distinct value in recognizing chest conditions like dry pleurisy, acute and chronic bronchitis, asthma, and valvular heart disease, which occasionally simulate tuberculosis and which are not recognizable by X-ray.

Fine points in physical diagnosis like Kernig's Sign, Litten's Sign, etc., have lost importance with the increased accuracy of the X-ray.

I have failed to find physical signs of tuberculosis in the lungs in about 40 per cent of minimal cases. Any method of examination which misses 40 per cent of minimal cases cannot be taken too seriously.

In cases in which I have been able to detect tuberculosis in the lungs by physical examination, and including all stages, I have under-estimated the extent of the lesion in 64 per cent as revealed by subsequent X-rays.

A good number of cases of pulmonary tuberculosis show no physical signs, while in other cases after the disease has begun to clear, the rales are more easily heard and may persist for 20 years after progress of the disease has been checked.

Perhaps the most important thing to learn about physical examination is its limitations. As a means of detecting and delimiting tuberculosis in the lung, it is so much less accurate than the X-ray as to be completely outclassed. The comparative value of physical signs and X-ray in delimiting tuberculosis lesions is shown in Table 2.

TABLE II

Physical Examination

In 592 positive sputum cases, showed less disease than X-ray in 64%.

In minimal apex lesions shown by X-ray, physical signs were absent in 15 of 32 cases.

1,000 CAVITIES		
*Cavities found:	Cases	Per cent
By physical signs and X-ray	451	45.1
By physical signs and not by X-ray	67	6.7
By X-ray and not by physical signs	482	48.2
Total	1,000	100.0

*Includes honeycomb type.

Sputum Examinations

All patients who expectorate should have sputum examinations. The presence of tubercle bacilli in the sputum is the nearest we can come to a certain diagnosis of tuberculosis during life. If negative, at least three examinations are necessary. If no sputum is present, it may sometimes be obtained by giving Iodides and we have found tubercle bacilli in the sputum so obtained in a few instances, but Iodides are irritating and this procedure is rarely justified. Diagnosis by sputum examination saves the poor patient the expense of X-ray.

The limitations of sputum examinations are illustrated by the following cases:

Case No. 7,008, a man ill since November, 1922, and admitted to the Sanatorium September 7, 1923. Tubercle bacilli were found for the first time at the 103rd examination on January 12th and again on January 13th, and 14th, 1927. He died January 17th, 1927.

Case No. 4,471, a woman ill since February, 1919, and admitted March 15, 1919. Tubercle bacilli were first found at the 102nd examination on May 4, 1922, and three times subsequently. She died August 13, 1922.

Case No. 7,401. Woman died after a sanatorium residence of 15 months, having had typical X-ray evidence of tuberculosis in both lungs, and without ever expectorating.

Tubercle bacilli are usually absent from the sputum of minimal, and often absent from the sputum of moderately advanced cases, yet occasionally it makes the diagnosis when it would otherwise be missed. I recall two instances where parents believed themselves to have had whooping cough simultaneously with their children. I thought this probable as the few signs found were not inconsistent with a bronchitis accompanying whooping cough, but to my surprise the sputum, examined as a routine, was positive.

Abundant purulent sputum free from tubercle bacilli suggests bronchiectasis, abscess or cancer, especially if elastic tissue is present. The results of sputum examination in 1,150 cases are shown in Table 3.

TABLE III
Examination of Sputum

Stage	1,150 CASES*				
	No. Cases	T.B.+ Cases	Per cent	T.B.— Cases	Per cent
Minimal	141	15	10.6	126	89.3
Mod. Advanced	355	184	51.8	171	48.1
Far Advanced	654	589	90.0	65	9.9
Total	1,150	788	68.5	362	31.4

*Including 104 "no sputum" cases.

Other Tests

Guinea pig inoculation is more dependable than laboratory examination of the sputum. Lord quotes Mankel as demonstrating tubercle bacilli in 35.7 per cent of 70 negative cases. It takes 2 or 3 months, and in the interest of the patient a decision usually must be made before that time.

The subcutaneous tuberculin test was formerly in frequent use in our work. A negative reaction to 10 mg. repeated three times as required by Koch, means no active tuberculosis in doubtful cases. We have used the subcutaneous tuberculin test for diagnosis in 243 cases, and I have never known of any case in which a negative reaction was followed by active tuberculosis. With good X-ray films subcutaneous tuberculin is rarely necessary. The complement fixation test has so far failed in the doubtful cases in which it is needed.

The X-ray

The consideration of the use of the X-ray in the diagnosis by the next speaker makes it unnecessary for me to cover this subject in detail, but no paper on the diagnosis of phthisis in adults could be satisfying which did not at least briefly point out the advantages of this instrument which has grown to be our chief reliance.

The X-ray should always be used if symptoms of lung disease are present. Stereoscopic films are best in negative sputum cases. Poorly taken films obviously should be replaced by good films before attempting to interpret them, and our standard of what are good films should be high. The X-ray is incomparably superior to physical examination in its power to find and to outline tuberculosis areas in the lung.

By repeated X-ray films at intervals of a few weeks or a few months we can see the extension, the consolidation, the excavation, or the clearing, the shrinking and the fibrosis of tuberculosis areas, displayed with great accuracy.

The X-ray may miss newly developing tubercles from a few days up to a few weeks old. It will very rarely miss a tuberculosis lesion large enough to cause clinical disease and it will show readily, primary calcified lesions as small as a shot and many soft appearing recent infiltrations from 1 to 2 cm. in diameter.

Of 49 cases of frank hemoptysis and 6 cases of blood streaked sputum in which there were good stereoscopic films free from any evidence of tuberculosis, 3 or 5.4 per cent were known to have subsequently developed tuberculosis.

Case No. 8785 had negative films on December 22, 1925, blood streaked sputum on December 26, 1925, slight but definite subclavicular mottling in

both lungs appeared on the next films taken December 18, 1926.

Case No. 9295. Frank hemoptysis occurred May 6, 1927, and stereoscopic films taken May 18, 1927, and September 13, 1927, were negative. Films taken August 27, 1928, showed fine mottling in the first 3 interspaces on the left side. Several positive sputums were obtained later.

Case No. 9687. Hemoptysis occurred in the spring of 1926 and again May 20, 1929. Stereoscopic films on June 25, 1929, and July 2, 1929, were negative but films taken October 29, 1929, showed left subclavicular infiltration followed by positive sputum.

With good films free from any evidence of tuberculosis in the lungs, clinical pulmonary tuberculosis is very rarely present.

The limitations of the X-ray are that it will usually miss dry tuberculous pleurisies and that while it will readily show diseased areas in the lungs, it will not tell whether the increased densities are due to tuberculosis, abscess, cancer or other disease.

It will furnish helpful information but it will not certainly tell whether tuberculosis is active or not. Activity must be recognized by the history and symptoms.

An attempt to diagnose tuberculosis provisionally from the X-ray alone without the history, symptoms, physical signs or sputum examination is shown in Table 4. Of course one should use all the evidence to make the clinical diagnosis of tuberculosis, but this table shows what can be done by the X-ray alone, as a demonstration of its value.

TABLE IV

Phthisis, 1,213 Cases. Diagnosis by X-ray only.

	Succeeded		Failed	
	Cases	Per cent	Cases	Per cent
Minimal	119	78.8	32	21.1
Mod. Advanced	367	90.1	40	9.8
Far Advanced	649	99.0	6	.9
Total	1,135	93.5	78	6.4

X-ray failed to reveal lesion in:

5 of 2,000 positive sputum cases = 0.25%

5 of 1,000 negative sputum cases = 0.50%

There is a small percentage of cases in which the X-ray evidence of disease is present but not sufficiently definite to warrant a probable diagnosis.

To sum up briefly, a physician's duty in the diagnosis of pulmonary tuberculosis: Take a complete history as it helps to point the way and avoid pitfalls. Examine carefully to find as much as possible especially non-tuberculous conditions simulating tuberculosis. Attach little importance to negative physical examination. If sputum is negative follow with an X-ray examination by some one experienced in the interpretation of lung films. An entirely negative X-ray film will exclude clinical tuberculosis 98 or 99 times in 100. A small percentage of negative sputum cases with doubtful films must remain under observation as suspects.

Let us turn from methods of diagnosis of individual patients to the strategy of the campaign to find patients in an early stage of the disease.

The examination of all school children for tuberculosis is excellent work but as most of the clinical tuberculosis which is dangerous to the community is found not among school children, but among adults, the physical and X-ray examination of all the adult population should bring far greater results.

It would find the minimal cases in time to save most of them, and find the advanced cases who were spreading infection.

The results which we might hope to obtain from such a plan as compared to our present policy, are shown in Table 5.

TABLE V
Comparison of Methods

Stage	Diagnosis by Exam. of Contacts		Diagnosis on Adm. to Sanatorium	
	No. Cases	Per cent	No. cases	Per cent
Minimal	57	66	441	11.5
Mod. Advanced	17	20	1,276	33.2
Far Advanced	12	14	2,116	55.2
Total	86	100	3,833	99.9

SUMMARY

1. Of 1000 cavities only 51.8 per cent were found by physical signs as against 93.3 per cent by X-ray.

2. Of 1150 cases tubercle bacilli were found in 10.6 per cent of Minimal, 51.8 per cent of Moderately advanced, and 90 per cent of Far advanced cases.

3. A probable diagnosis by the X-ray alone was correct as judged by full clinical data in 78.8 per

cent of Minimal, 90.1 per cent of Moderately advanced and 99 per cent of Far advanced cases.

4. X-ray examination of adult contacts yielded 86 cases of clinical tuberculosis of which 66 per cent were Minimal, 20 per cent Moderately advanced and 14 per cent Far advanced.

CONCLUSION

When adult tuberculosis patients, on their own initiative consult physicians, most of them are already in the advanced stages. The majority can be diagnosed in the Minimal stage only by the X-ray examination of supposedly healthy persons.

Whether the general population can be so educated as to accept repeated X-ray lung examinations in apparent health, or whether some simpler and better diagnostic method can be devised, are problems of the future, but until these problems are solved, pulmonary tuberculosis in the majority of cases will be recognized only in the advanced stages.

OBITUARY

DR. WILLIAM THEODORE KNOOP

Dr. William Theodore Knoop, a member of the Providence Medical Association, died at Wallum Lake on December 7, 1930, after an illness of two and one-half years. Dr. Knoop was born in Providence, June 28, 1879. He received his preliminary education in the Providence Schools, was graduated from Brown University in 1901, and received his degree from Harvard Medical School in 1906.

Dr. Knoop always practised in Providence and Cranston. He was medical inspector in the Cranston Schools for eight years and carried on the work until a few months before his death. He was a prominent Odd Fellow being a member of Franklin Lodge and of the Canton and Encampment.

Dr. Knoop was very conscientious in the care of his patients and never refused his assistance no matter what sacrifice might be required of him. His devotion to duty undoubtedly shortened his life.

H. F. KEEFE, M.D.,
DANIEL S. LATHAM, M.D.,
CRAIG S. HOUSTON, M.D.

Chairman.

ANNUAL REPORT OF MILK COMMISSION OF THE PROVIDENCE MEDICAL ASSOCIATION

The Milk Commission of the Providence Medical Association herewith presents its report for the year 1930.

Through the co-operation of the Commission of Boston and Worcester we have accepted the Certification of the following farms:

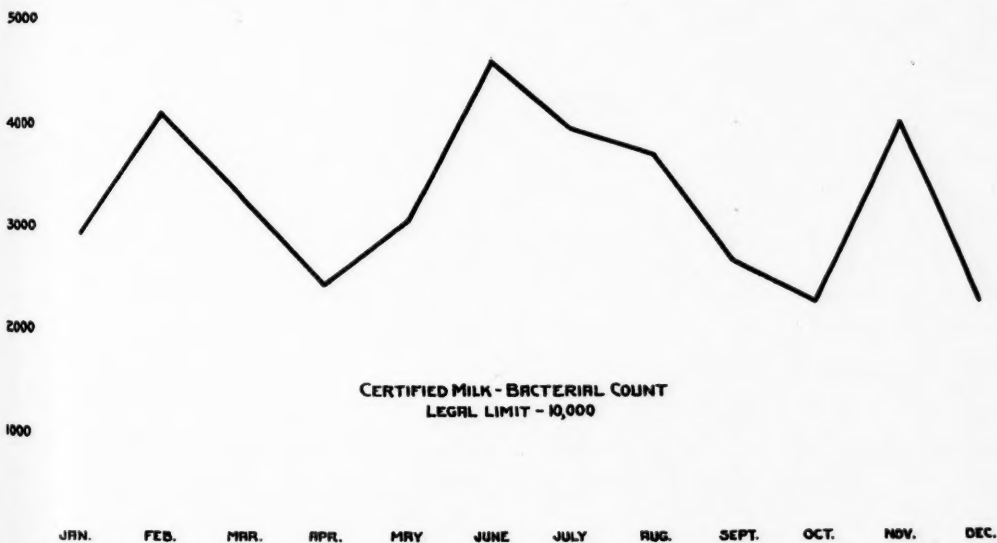
1. Bonnie Brook Farm, H. P. Hood & Son.
2. Alta Crest Farms, Spencer, Mass.
3. Walker-Gordon Laboratory Co.

Our farms are free from abortus infection and are tuberculosis free.

Weekly bacteriological and chemical examinations are made in the laboratories of Brown Uni-

versity under the supervision of Professor Graham. The results of these analyses are given in the following table:

	ALTA CREST			BONNIE BROOK			WALKER-GORDON		
	B. Fat	T. Solids	Bacteria	B. Fat	T. Solids	Bacteria	B. Fat	T. Solids	Bacteria
January	4.1	13.11	1640	4.1	12.98	3680	4.05	13.07	3480
February	4.1	13.12	5913	4.0	12.63	2025	4.1	13.19	4600
March	4.0	13.06	3500	4.1	13.18	2175	4.1	12.26	4325
April	4.0	13.16	1720	4.07	13.11	1600	4.1	13.15	4080
May	4.0	12.97	3300	4.07	13.18	1650	3.88	12.80	4360
June	4.1	13.18	6350	4.03	13.20	3225	3.8	12.58	4450
July	4.0	12.90	6440	4.1	13.21	2300	3.9	12.26	3280
August	4.06	12.85	5180	4.1	13.35	2250	3.78	12.24	3925
September	3.9	12.99	2250	4.3	13.55	2050	4.0	12.72	4925
October	4.0	12.97	1280	4.3	13.25	1960	4.13	12.97	3850
November	4.05	13.06	1975	4.43	13.56	2875	4.15	13.15	7300
December	5.4	13.27	1367	4.36	13.61	2233	4.0	13.17	3333
Average for the year	4.15	13.05	3409	4.16	13.07	2335	3.99	12.88	4325



The chart shows the average bacterial counts for the three certified milks sold in Providence. It will be seen that the majority of counts were under 6500.

These counts compare very favorably with the averages of Grade A Raw Milk 45,000, and Grade

A Pasteurized 2900, which were reported for 1930.

The members of the Commission are as follows: Dr. William P. Buffum, Chairman, Dr. Maurice Adelman, Dr. William H. Jordan, Dr. A. Roland Newsam, Dr. Reuben C. Bates, secretary and treasurer.

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EDITORIALS

OUR CIVIC PRIDE

The Providence City Hospital has been in existence but little more than twenty years. During that time this hospital has made such prodigious advances in the care and treatment of the sick that it exerts a world-wide influence. Many of us, particularly in Rhode Island, may not appreciate that fact.

A glance at the visitors' register for 1912 reveals thirty visitors from June to January. One of these

came from Wales, six from Canada and the rest from the United States. Those in this country ranged from Florida to Washington. In 1930 the visitors came from England, China, Bulgaria, France, Roumania, Australia, South Africa, Scotland, Hungary, New Zealand and various parts of the United States. During January, 1931, nineteen visited the Hospital. Four were from China, two from Italy and one each from India, Porto Rico, Siam, Roumania, Czechoslovakia and Austria. The visitors from the United States during that month were from North Carolina, Michigan, Massachusetts and Mississippi.

In addition to the visitors who come to observe, there is a larger group who come to study, for this hospital has always encouraged study. Rockefeller Foundation lends doctors and nurses to the Providence City Hospital for training. The Harvard School of Public Health also sends their students here once each year for observation and Tufts Medical College sends two students per month for study and training. In addition twenty hospitals have affiliations whereby they are able to send their nurses through the hospital's training school for nurses.

Only a portion of the hospital's work lies in teaching. Every week brings one or more letters from various parts of the world to the superintendent requesting advice or criticism of plans for hospitals, administration and other matters pertaining to hospital work. Last week one came from St. Paulo, Brazil. All these questions are answered with care. Other cities at times have called the superintendent to survey their health problems and to suggest corrective measures. This happened with two of the largest cities in America; with a man of this high executive capacity that has become nationally and internationally known and recognized, the Providence City Hospital has had one great advantage from its inception. In correlation to this it has also had as directors, men of rare ability. Had it not been for these men Providence would very likely have had just another hospital, that is, brick and plaster. The methods, first put into practice here, are now studied and copied all over the world. The influence on world health which this hospital will have is inestimable.

BIRTH CONTROL OR WHAT HAVE YOU!

We are in receipt of an invitation to a luncheon under the auspices of the American Birth Control League and from the program it would seem that the P. C. exercises would treat somewhat of the subject to which the League is dedicated. Quite a few years we recall a highly enjoyable annual dinner of the R. I. Medical Society after which the distinguished speaker of the evening regaled us with a speech on moist gangrene of the bladder. It was quite enough to make one "pitch his lunch." But such an invitation gives pause for it is evident that some of the most important and sacred things in life are not taken from the medical profession and placed in the hands of Clergy, nurses, women's

clubs and other individuals and organizations which are by tradition, training and education totally unfit to comprehend, discuss or treat the physical and economic problems involved. Behind every case of this sort there is sooner or later the element of responsibility with its concurrent liability. Every entrance of the clergy into medical subjects has resulted in misunderstandings and uncertainties. It might be said that the "Emmanuel Movement" so enormously popular at one time is now a thing of the past and to no particular credit to those concerned. Worship at the grave of the Rev. Fr. Powers was not particular productive of therapeutic results and there are very many other reasons why the conclusion may be made that the very best medical results are accomplished by well trained persons who give their lives to the study of disease and its remedies. We believe that Birth Control and its methods should be entirely in the hands of the medical profession and that the laity, what few of it are guided by altruistic motives and not by morbid and ill advised curiosity, should seek its information from the medical profession and not from the self styled "economists" who seek personal prominence rather than the true amelioration of social conditions. Some fads have been productive of much good but so far this has not proved itself to be one of them. There is still some privacy in life, there is yet a need of medical counsel, and individual and not mass guidance will accomplish the best results.

MISCELLANEOUS ARTICLE

A LITTLE OF GENERAL PRACTICE*

A Reminiscence

At the summons, I hurried from my warm bed into the cold dawn. The cold auto, with some groaning of battery, finally surged out upon the frozen highway. I turned up my coat collar and sank into a reverie of self castigation that I was fool enough to take upon my shoulders this yoke of practice, while my younger and more brilliant confreres, with specified hours of special work were oblivious in sleep.

The road was semi-frozen and badly rutted by the last terrific rainstorm which followed close upon the heels of the earthquake a few days ago. The little house was lighted up like a beacon and

*By Henry A. Jones, M.D., 545 Pontiac Avenue, Eden Park, R. I.

this served to distinguish it from its neighbors in this semi-foreign colony. The aged mother of the patient awaiting my coming, opened the door and in broken English gave me welcome. The patient, of the Morontic type, lying in the adjoining room, gave vent to cries that were suggestive of the beginning stages of primary motherhood. An elder sister called in for this occasion scanned me closely and while adjusting the upper part of her dress, broke her string of "best ten-cent pearls," which went bounding and bouncing around on the floor, under the stove, and the chairs, the bureau and the refrigerator. This elder sister was a sturdy, bobbed-haired young woman whose age I guessed correctly at twenty-six, she in the glory of her young matronhood imparted to me her obstetrical history amid side remarks and exclamations about her pearls glistening on the floor. She gloried in the fact that she had to have forceps on all three of her children (which recital increased the peevish cries for aid from the other room) "and she was a forceps case, too," the aged mother broke in to impart. Two of the young matron's babies had died, one from some sort of brain tumor, and the other from "spinal meningitis." She quotes the different physicians and their methods, in the meantime loudly encouraging her sister with a pat on the back, while the aged mother, with the most tender solicitude, wraps the girl's feet warmly in a shawl to protect them from the cold March air which creeps under the door and over the threshold into the room. I realize I have been called all too soon and that I am in for a slow and long job, for I know the patient, having attended her on a threatened miscarriage during this pregnancy. I am aware of her neurotic tendencies and her susceptibility to suggestions from all sources. The morning breaks, the cold gray dawn peers through the misty window panes, the sister and mother are anxious, they fret at the delay, "What about forceps, Doctor?" I shook my head, they become indignant! They abuse me in their native tongue, which, as cries increase from the patient, are wrought into English, that "no other Doctor would let a poor girl suffer so." I ask them if they would care to send for a previously employed physician and the elder sister, who had him, said, "No; he is too sassy." Investigation of this revealed that the physician, probably weary in well doing, had presented his bill shortly after her last confinement. After exclaiming again that "something ought

to be done," and that my methods "are slower than the gang that dug Floyd Collins out," I insisted these innuendos cease, or they must search elsewhere for that medical Magi who could more quickly gather the harvest of the fruit of the womb. The verbal storm was finally stilled. Examination again shows the future heir to the two-roomed cottage, the hundred and seventy-five dollar Victrola, the swell-fronted furniture, the massive bedstead with its thin mattress, still snugly ensconced from interruption for some hours. A quieting potion is given, and I promise to return shortly, and then I steal out of the house like a culprit in the night, pushing aside the feet of the sleeping boy husband who had curled himself up in the turn of the kitchen stairway to snatch a few moments of repose. I turn the car homeward, a short cut appears easy, when suddenly I find myself enmeshed to the gears in mud, hurriedly I reverse and with difficulty back out of that sucking quagmire and with great clots hanging to the wheels make out upon the frozen macadam. A three-mile drive with the cold air piercing through the car does not put me in the mood to enjoy the tender symphonies of "Silent Night." I finally make out my garage in the gusty snow squall which sprang up with the dawn, as quietly as possible I wheel into it, I tip-toe into the house and as I burrow into the bedclothes mutter as one did in ancient days, "Poor Tom's A'cold."

* * * * *

I am again in the house of travail. The kitchen is a-steam from the boiling kettle on the stove. The coffee on the range is bubbling and jetting up into the top of the percolator and the aroma is not ungrateful to me. On the kitchen table I pen the previous notes in order to keep awake. Suddenly, the sounds from the chamber adjoining have a different note, and the sleepy, heavy-eyed household look at me expectantly. They looked at me before "to stop the storm"; now they look to me to pilot the sufferer safely through the pangs of travail to the tranquil haven of motherhood. It is over: The household is now a trinity. The wail of a male child pierces through the glad sobs of the nerve-racked parents and, where one brief hour ago were the husband and wife with clasped hands, there is now the father and the mother eagerly exclaiming, and mildly arguing about the family resemblance of their son! The aged mother, now a double parent in that home, puts an arm around

me and pats me on the back, and with a "Good Doktor," eagerly urges me to drink the ever-present coffee. The young father, with tearful eyes, tells me he is going to treat his boy better than he was used. "You know, Doctor, father tried to drown me, he did, and then when I ran away he had me arrested and sent to Sockanossett School, and I was there for a whole year, and played the bass horn in the band, I did, yes sir, for a whole year I did, I'll use my boy better than that." I bade them good night, and as I was turning away the elder sister held out her hand and shook mine with such vigor that the motion set her mended string of pearls clattering together as if they were applauding, and also, that they showed their appreciation that again they were joined together and assembled once more, resting upon that capacious bosom, and, as the door closed the glint of rays of the setting sun brought forth from their warm surface a lustre that made them as resplendent as if they were the true pearls of Ceylon.

The tension and anxiety of the previous hours were released, and as the car rolled back through the mud I hummed a refrain from the anthem, "Open the Gates of the Temple," and received satisfaction in that exquisite harmony of the lines, "And if he lives, I too, I too shall live."

SOCIETIES

THE RHODE ISLAND MEDICAL SOCIETY

A meeting of the Council was held February 20, 1931, at 4:30 at the Medical Library, and was called to order by the President.

The secretary brought up the question of Dr. J. Gordon Anderson's membership in the Society. Dr. Anderson was dropped from the Society for non-payment of dues in 1930, and was so notified. He subsequently sent his check for dues in arrears, but in the meantime the Washington County Medical Society notified the State Society that he had been dropped from the District Society for non-payment of dues and had not been reinstated. The secretary asked for action of the Council in Dr. Anderson's case and it was moved and seconded that the secretary notify Dr. Anderson that inasmuch as he is not a member of his District Society it is impossible for the State Society to reinstate

him to membership in the Rhode Island Medical Society, and to return Dr. Anderson's check for dues in arrears, and to notify the American Medical Association of such action. It was so voted.

It was voted that the Treasurer notify Dr. Henry A. Cook that under the provision of the By-laws he, having reached the age of 65 years, is entitled to continue membership without dues, provided the arrears in his dues are paid.

The treasurer, Dr. Mowry, brought up the question of increasing the amount of liability insurance from \$5,000 and \$10,000 to double this amount. The Council voted not to increase the amount of liability insurance.

Adjourned.

J. W. LEECH, M.D.

HOUSE OF DELEGATES

The meeting of the House of Delegates was called to order by the President, February 20, 1931, at 5 P. M. in the Medical Library.

The committee on Education State and National of which Dr. P. P. Chase is chairman, reported that one meeting had been held for the purpose of considering the action in regard to the Westerly Medical Society's proposal for the establishment of closer relationship between the public and the medical profession, and hoped to present a more definite report later.

Dr. Brackett, chairman of the committee on obstetrical deaths, reported for the committee, consisting of Dr. Chapin, Providence; Dr. MacLeod, Newport; Dr. McLaughlin, Woonsocket; and Dr. Waterman, Providence; that the committee had been organized and were carrying on the investigation of obstetrical deaths. A written form has been gotten out by the committee and Dr. Goldberger acting as agent for the committee makes a personal call upon every doctor who has signed a death certificate of a woman in childbirth. The purpose of this inquiry is to determine definitely if possible whether or not the death may be chargeable directly to the obstetrical condition or to other causes. Dr. Brackett stated that the committee was receiving heartiest co-operation from the physicians, hospitals and Boards of Health. Their investigation began in January, 1931, and a more detailed report will be forthcoming at a later date.

Adjourned.

J. W. LEECH, M.D.

The regular quarterly meeting of the Rhode Island Medical Society was held March 5, 1931, at the Medical Library, being called to order at 4:10 P. M. by the President, Dr. Julian A. Chase.

The minutes of the December meeting, the House of Delegates and the Council were read by the secretary and approved.

The following papers were presented:

1. "Electric Ionization in Otorhinology," Dr. Gordon J. McCurdy (Stereoptican). Discussion by Drs. Adams, Harvey, and Blanchard.

2. "Neurological Surgery for the Relief of Pain," Dr. Wilfred Pickles. Discussion by Drs. Sanborn and Kingman.

3. "Electric Enucleation of Tonsils with the Surgical Cutting Current," Dr. Howard E. Blanchard. (Motion picture illustration, Dr. Meyer Saklad). Discussion by Drs. L. B. Porter and F. M. Adams.

Adjourned.

J. W. LEECH, M.D., *Secretary*.

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. John E. Donley, Monday evening, March 2, 1931, at 8:45 o'clock. The records of the last meeting were read and approved.

The secretary read an obituary of William T. Knoop, signed by Craig S. Houston, H. F. Keefe and Daniel S. Latham. It was voted to spread this on the records, send a copy to the family and one to the RHODE ISLAND MEDICAL JOURNAL.

Dr. Joseph Kerney presented a case of prostatic stone diagnosed as such and removed from the prostate. Drs. Edward S. Brackett and Anthony V. Migliaccio reported a death at the Lying-In Hospital from a ruptured uterus following the injection of pituitrin. It was discussed by Drs. Noyes, Skelton, Hale, Kerney and Leonard. It was voted to refer this to the Standing Committee. The first paper was read by Dr. Stanley S. Freedman on "Review of Some Rare Diseases of Infancy and Childhood with Special Reference to Gauchers Splenomegaly and Niemann-Picks Disease." These and amaurotic family idiocy and Von Jacksch disease have to do with abnormalities of the reticulo-endothelial system. Both Gauchers and Niemann-

Picks disease occur mostly in females of the Jewish race and are thought to result from disturbances of metabolism. He gave a description of the anatomical histological findings. Von Jacksch disease resembles pernicious anemia in the adult. Amaurotic family idiocy affects the central nervous system. X-ray prints were shown illustrating the bony changes in Gauchers disease. The paper was discussed by Drs. Utter, Lawson and Benjamin.

The second paper was some aspects of birth injuries. Dr. Ira H. Noyes spoke from the obstetrical viewpoint. Dr. Migliaccio gave statistics of injuries at the Lying-In Hospital in 1926-30. Dr. B. Feinberg reviewed the injuries which interest the pediatrician. Dr. Henry McCusker spoke on birth paralysis and orthopedic methods to avoid contractions. The paper was discussed by Drs. Brackett, McDonald, Hale and Utter.

The meeting adjourned at 10:45 P. M. Attendance 96.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary*

HOSPITALS

THE MEMORIAL HOSPITAL

Meeting called to order at 9:00 P. M., February 5th, 1931, by President Charles H. Holt, M.D. Minutes of previous meeting read and approved as read.

Two letters were read acknowledging flowers sent to funeral of the late Dr. Blosser and for the resolution of the Staff sent regarding the death.

Dr. Meyer Saklad read the paper of the evening, the title of which was "The Value of Nerve Block in Diagnosis and Therapy." He spoke of the value in diagnosis, treatment of surgical shock for the intractable pain of angina and in assisting the vascular condition of the extremities.

The discussion of the paper was opened by Dr. W. A. Stoops, who described treating by nerve block of obliterative conditions of the peripheral arteries.

Meeting adjourned at 10:00 P. M.

STANLEY SPRAGUE, M.D., *Secretary*